

maximum 30-day rolling average effluent concentration was 13.6 mg/L, which occurred in November 2006. Therefore a reasonable potential exists to exceed the applicable MCL for nitrate plus nitrite, and the AMEL for nitrate plus nitrite of 10 mg/L is retained from Order No. R5-2002-0210. This effluent limitation is also included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply. The MEC occurred before recent plant upgrades were completed. The Discharger reported that the upgrades have improved nitrate plus nitrite removal to concentrations below the MEC, however, the monitoring reports do not yet contain enough data to show there is no reasonable potential to exceed water quality standards. The Discharger is confident that the upgrades will allow the discharge to meet the final effluent limitations and did not request a compliance schedule or interim limitation for nitrate plus nitrite.

Order No. R5-2002-0210 also included an AMEL for nitrite of 1 mg/L (21 lbs/day). The MEC for nitrite was 0.3 mg/L, based on 155 samples collected between January 2005 through December 2007. The maximum 30-day rolling average effluent concentration was 0.11 mg/L, which occurred in July 2006. The monitoring data collected for nitrite during the term of Order No. R5-2002-0210 indicated that there is no reasonable potential to exceed water quality objectives. Therefore, as described in section IV.D.3, nitrite effluent limitations have not been retained in this Order.

Monitoring data for nitrate is not available. Because nitrate and nitrite are generated as part of the wastewater treatment plant operations, weekly effluent monitoring is required to monitor the effectiveness of the tertiary treatment system to control these constituents.

- m. **Pathogens.** The beneficial uses of Deer Creek and the Cosumnes River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational and food crop irrigation uses.

The California DPH has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median. As coliform organisms are living

and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median limitation.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as “...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.” Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DPH’s reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. To protect human health, DPH recommends that discharges, to receiving streams with contact recreation beneficial uses and less than a 20:1 receiving water to effluent dilution ratio, be tertiary treated or equivalent.

Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH. In addition to coliform testing, an operational specification for turbidity has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DPH recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity.

This Order retains effluent limitations for total coliform organisms and a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water when the receiving water to effluent dilution ratio is less than 20:1. The Regional Water Board previously considered the factors in CWC section 13241 in establishing these requirements in Order No. R5-2002-0210.

Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the receiving stream. Coliform limits are

imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways. In a letter to the Regional Water Board dated 8 April 1999, the DPH indicated that they would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30-day period. Order No. R5-2002-0210 contained an effluent limitation of 23 MPN/100 mL as a 7-day median and an MDEL of 230 MPN/100 mL applicable when flow in Deer Creek provides a daily average stream flow-to-effluent dilution of 20:1. Based on a review of data submitted by the Discharger, receiving water dilution is usually less than 20:1, however these effluent limitations are retained in this Order as they are consistent with DPH recommendations.

- n. **pH.** The Basin Plan includes a site-specific water quality objective for Deer Creek that the *"For Deer Creek, source to Cosumnes River, pH shall not be depressed below 6.5 nor raised above 8.5."* Effluent limitations for pH are included in this Order based on this site-specific Basin Plan objective for pH.
- o. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, sulfate, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. There are no USEPA water quality criteria for the protection of aquatic organisms for these constituents. The Basin Plan contains a chemical constituent objective that incorporates State MCLs, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, sulfate, and chloride.

Table F-4. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal ¹	Secondary MCL ²	Effluent	
			Average	Maximum
EC (umhos/cm)	Varies ³	900, 1600, 2200	468	560
TDS (mg/L)	Varies	500, 1000, 1500	NA	NA
Sulfate (mg/L)	Varies	250, 500, 600	NA	NA
Chloride (mg/L)	Varies	250, 500, 600	NA	NA

¹ Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985).

² The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

³ The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

NA= Not Available

- i. **Electrical Conductivity (EC).** The secondary MCL for EC is 900 umhos/cm as a recommended level, 1600 umhos/cm as an upper level, and 2200 umhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 umhos/cm as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 umhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e., a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The Discharger reported in their Salinity Minimization Plan for their El Dorado Hills Wastewater Treatment Plant that conversion to UV disinfection from sodium-based chlorination and dechlorination at the Facility in August 2006 reduced the effluent electrical conductivity by approximately 26 percent. A review of the Discharger's monitoring reports subsequent to the conversion to UV disinfection at the Facility until September 2008 shows an average effluent EC of 468 umhos/cm, with a range from 310 umhos/cm to 560 umhos/cm. The background receiving water EC averaged 430 umhos/cm in 156 sampling events collected by the Discharger from January 2005 through December 2007. These levels do not exceed the agricultural water quality goal of 700 umhos/cm.

- ii. **Salinity Effluent Limitations.** Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, "*...the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects.*" The State Water Board states in that Order, "*Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta.*" The State Water Board goes on to say, "*Construction and operation of reverse osmosis facilities to treat discharges...prior to implementation of other measures to reduce the salt load in the southern*

Delta, would not be a reasonable approach."

The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Regional Water Board meeting, Board Member Dr. Karl Longley recommended that the Regional Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, *"The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development."*

Based on the relatively low reported salinity, the discharge currently does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to Deer Creek, a tributary of the Cosumnes River and eventually the Sacramento – San Joaquin Delta, of additional concern is the salt contribution to Delta waters.

The Antidegradation Policy (Resolution No. 68-16) requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge. For salinity, the Regional Water Board considers an effluent salinity of an increment of 500 $\mu\text{mhos/cm}$ over the salinity of the municipal water supply as representing BPTC for municipal wastewater treatment plants. The maximum annual average electrical conductivity concentration of the water supply was 70 $\mu\text{mhos/cm}$, which results in a BPTC limitation of 570 $\mu\text{mhos/cm}$. The maximum observed rolling annual average effluent concentration observed from the Facility subsequent to conversion to UV disinfection in August 2006 was 473 $\mu\text{mhos/cm}$, which occurred during the period ending on 9 September 2008. As evidenced by the relatively low levels of salinity in the effluent, the Discharger has provided for BPTC of its discharge. Therefore, this Order establishes an interim annual average effluent limitation of 570 $\mu\text{mhos/cm}$ for EC in order to ensure that the Discharger will continue to control the discharge of salinity. The interim limitation is applicable until the Regional Water Board completes development of a new salinity policy for the Central Valley or upon availability of additional information. This Order requires quarterly monitoring of EC and TDS of the Discharger's influent and water supply (see Attachment E sections III.A. and IX.B.).

As discussed above, the Discharger replaced sodium-based chlorination and dechlorination with UV disinfection, which resulted in a significant decrease in the effluent EC concentrations. In order to ensure that the

Discharger has evaluated all opportunities to control the discharge of salinity, this Order includes a requirement to submit a salinity evaluation and minimization report.

- p. **Settleable Solids.** Order No. R5-2002-0210 included numeric monthly average and daily maximum effluent limitations of 0.1 mL/L and 0.2 mL/L, respectively. Settleable solids was detected on 1 and 2 May 2007 at a concentration of 0.1 ml/L, based on 1,095 sampling events. These detections were below the applicable daily maximum limitation of 0.2 ml/L contained in Order No. R5-2002-0210. The monthly average for May 2007 was also below the monthly average limitation of 0.1 ml/L. Settleable solids was not detected in the remaining 1,093 sampling events with a detection limit of 0.1 ml/L. Therefore, monitoring data collected for settleable solids during the term of Order No. R5-2002-0210 indicates that there is no reasonable potential to exceed water quality objectives. Additionally, the Discharger has upgraded the Facility, which is a state-of-the-art wastewater treatment plant that does not rely on settleable solids monitoring information to determine the level of performance necessary to comply with secondary or tertiary level effluent limitations. Therefore, effluent limitations and monitoring requirements are not necessary to evaluate the performance of the Facility and, as described in section IV.D.3, settleable solids effluent limitations have not been retained in this Order.
- q. **Toxicity.** See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.
- r. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the worst-case effluent hardness of 42 mg/L as described in section IV.C.2.b of this Fact Sheet, the applicable chronic criterion (maximum 4-day average concentration) and the applicable acute criterion (maximum 1-hour average concentration) are both 57.5 ug/L, as total recoverable.

The MEC for total zinc was 85 ug/L, based on four samples collected between 13 March 2006 and 21 August 2007. Upstream receiving water data for zinc were unavailable. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc. No dilution is allowed due to periods of no flow in the receiving water. An AMEL and MDEL for total zinc of 28.6 ug/L and 57.5 ug/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-6 for WQBEL calculations).

4. WQBEL Calculations

- a. Effluent limitations for ammonia and zinc were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations for these parameters.
- b. **Effluent Limitation Calculations.** In calculating effluent limitations based on aquatic life criteria, the effluent concentration allowances (ECAs) were calculated as follows:

$$ECA_{acute} = CMC + D(CMC-B) \text{ when } CMC > B$$

$$ECA_{chronic} = CCC + D(CCC-B) \text{ when } CCC > B$$

$$ECA_{acute} = CMC \quad \text{when } CMC \leq B \quad \text{and when } D = 0$$

$$ECA_{chronic} = CCC \quad \text{when } CCC \leq B$$

where:

ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion

$ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion

CMC = criteria maximum concentration (one-hour average)

CCC = criteria continuous concentration (four-day average, unless otherwise noted)

D = dilution credit

B = maximum receiving water concentration

For the human health, agriculture, or other long-term criteria/objectives, the ECA is calculated as follows:

$$ECA_{HH} = HH + D(HH - B)$$

where:

ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

AMELs based on human health criteria are set equal to the human health ECAs, and a statistical multiplier is used to calculate the MDEL.

$$AMEL = \text{mult}_{AMEL} \left[\min \left(M_A ECA_{acute}, M_C ECA_{chronic} \right) \right] \quad LTA_{acute}$$

$$MDEL = \text{mult}_{MDEL} \left[\min \left(M_A ECA_{acute}, M_C ECA_{chronic} \right) \right] \quad LTA_{chronic}$$

$$MDEL_{HH} = \left(\frac{\text{mult}_{MDEL}}{\text{mult}_{AMEL}} \right) AMEL_{HH}$$

where: mult_{AMEL} = statistical multiplier converting minimum LTA to AMEL
 mult_{MDEL} = statistical multiplier converting minimum LTA to MDEL
 M_A = statistical multiplier converting CMC to LTA
 M_C = statistical multiplier converting CCC to LTA

- c. WQBELs were calculated for ammonia and zinc as in Tables F-5 through F-6, below.

Table F-5. WQBEL Calculations for Ammonia

	Acute	4-Day Chronic	30-Day Chronic
Criteria (mg/L) ¹	2.14	4.13	1.65
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	2.14	4.13	1.65
ECA Multiplier	0.32	0.53	0.78
LTA ²	0.68	2.18	1.29
AMEL Multiplier (95 th %)	1.55	3	3
AMEL (mg/L)	1.1	3	3
MDEL Multiplier (99 th %)	3.11	3	3
MDEL (mg/L)	2.1	3	3

¹ USEPA Ambient Water Quality Criteria.
² LTA developed based on Acute and Chronic ECA Multipliers calculated at 99th percentile level per sections 5.4.1 and 5.5.4 of TSD.
³ Limitations based on acute LTA ($LTA_{acute} < LTA_{4\text{-day chronic}} < LTA_{30\text{-day chronic}}$).

Table F-6. WQBEL Calculations for Zinc

	Acute	Chronic
Criteria, dissolved (ug/L) ⁽¹⁾	56.2	56.7
Dilution Credit	No Dilution	No Dilution
Translator ⁽²⁾	0.978	0.986
ECA, total recoverable ⁽³⁾	57.45	57.45
ECA Multiplier ⁽⁴⁾	0.321	0.527
LTA	18.45	30.30
AMEL Multiplier (95 th %) ⁽⁵⁾⁽⁶⁾	1.55	⁽⁸⁾
AMEL (ug/L)	28.6	⁽⁸⁾

MDEL Multiplier (99 th %) ⁽⁷⁾	3.11	⁽⁸⁾
MDEL (ug/L)	57.5	⁽⁸⁾
¹ CTR aquatic life criteria, based on a hardness of 42 mg/L as CaCO ₃ . ² USEPA Translator used as default. ³ ECA calculated per section 1.4.B, Step 2 of SIP. This does not allow for the consideration of dilution. ⁴ Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD. ⁵ Assumes sampling frequency n=>4. ⁶ The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD. ⁷ The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD. ⁸ Limitations based on acute LTA (Acute LTA < Chronic LTA)		

Summary of Water Quality-based Effluent Limitations Discharge Point No. 001

Table F-7. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
pH	standard units	--	--	--	6.5	8.5
Priority Pollutants						
Mercury, Total Recoverable	lbs/month	0.0024 ¹	--	--	--	--
Zinc, Total Recoverable	ug/L	28.6	--	57.5	--	--
Non-Conventional Pollutants						
Acute Toxicity	% Survival	--	--	²	--	--
Ammonia	mg/L	1.1	--	2.1	--	--
Nitrogen, Total (as N)	lbs/day ³	33	--	63	--	--
Chronic Toxicity	--	--	--	⁴		
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--
Total Coliform Organisms	MPN/100 mL	--	2.2 ^{5, 6}	23 ^{5, 7}	--	240 ⁵
		--	23 ^{6, 8}	230 ⁸	--	--

- ¹ Applied as a total monthly mass loading limitation.
- ² Survival of aquatic organisms in 96-hour acute bioassays of undiluted waste shall be no less than:
 Minimum for any one bioassay ----- 70%
 Median for any three or more consecutive bioassays ----- 90%
- ³ Based on an average dry weather flow of 3.6 MGD.
- ⁴ There shall be no chronic toxicity in the effluent discharge.
- ⁵ Applies when flow in Deer Creek provides less than a daily average stream flow-to-effluent dilution of 20:1.
- ⁶ Applied as a 7-day median effluent limitation.
- ⁷ Effluent total coliform organisms are not to exceed 23 MPN/100 mL more than once in any 30-day period.
- ⁸ Applies when flow in Deer Creek provides a daily average stream flow-to-effluent dilution of 20:1.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, *"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* (Basin Plan at III-8) The Basin Plan also states that, *"...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate..."*. USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2 "Toxicity Requirements" (pgs. 14-15) it states that, *"In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."* Accordingly, and consistent with Order No. R5-2005-0028, effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay-----70%
Median for any three or more consecutive bioassays-----90%

- b. **Chronic Aquatic Toxicity.** The Discharger performed 12 quarterly whole effluent chronic toxicity tests with five different test endpoints for a total of 60 bioassay results for the period January 2005 through December 2007. Of those chronic toxicity test results, the following table summarizes the bioassay results when the endpoint was greater than 1 chronic toxicity unit (TUc).

Table F-8. Summary of Chronic Aquatic Toxicity Results

Date	Species	Test Endpoint	Result (TUc)
23 October 2007	<i>Pimephales promelas</i>	Survival	8
23 October 2007	<i>Pimephales promelas</i>	Growth	8
23 October 2007	<i>Ceriodaphnia dubia</i>	Reproduction	8
20 November 2007	<i>Pimephales promelas</i>	Survival	1.3
20 November 2007	<i>Pimephales promelas</i>	Growth	1.3
20 November 2007	<i>Ceriodaphnia dubia</i>	Reproduction	8
15 January 2008	<i>Pimephales promelas</i>	Survival	2
15 January 2008	<i>Pimephales promelas</i>	Growth	2

Based on whole effluent chronic toxicity testing performed by the Discharger from January 2005 through December 2007, the discharge could cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective if there is not sufficient dilution in Deer Creek.

A narrative effluent limit does not allow the effluent limit to cause or contribute to chronic toxicity in the receiving water.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region⁴ that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, *"In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and

⁴ In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. However, the State Water Board found in WQO 2003-012 that, while it is not appropriate to include final numeric effluent limitations for chronic toxicity in NPDES permits for POTWs, permits must contain a narrative effluent limitation, numeric benchmarks for triggering accelerated monitoring, rigorous Toxicity Reduction Evaluation (TRE)/Toxicity Identification Evaluation (TIE) conditions, and a reopener to establish numeric effluent limitations for either chronic toxicity or the chemical(s) causing toxicity. Therefore, this Order includes a narrative effluent limitation for chronic toxicity and requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k). This Order also includes a reopener that allows the Regional Water Board to reopen the permit and include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

To ensure compliance with the Basin Plan's narrative toxicity objective and the narrative toxicity limitation contained in this Order, the Discharger is required to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, Special Provisions VI.C.2.a of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation, it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Except for ammonia, an oxygen-demanding substance, for those pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based (i.e., zinc and nitrate plus nitrite), mass-based effluent limitations are not included in this Order. Mass-based effluent limitations for ammonia, BOD₅, and TSS were calculated based upon the permitted average dry weather flow allowed in sections IV.A.1.a.vi and IV.B.1.b.vi of the Limitations and Discharge Requirements.

The mass-based performance effluent limitations for mercury were based upon the permitted average dry weather flow allowed in sections IV.A.1.a.vi and IV.B.1.b.vi of the Limitations and Discharge Requirements.

2. Averaging Periods for Effluent Limitations

Title 40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the USEPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. *"First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed."* (TSD, pg. 96) This Order utilizes a maximum daily effluent limitation in lieu of or in addition to average weekly effluent limitations for ammonia and zinc as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. DPH recommends that an AMEL is more appropriate for pollutants such as nitrate and nitrite for which the MCL is designed to be protective of acute health effects. Therefore, an AMEL has been applied for nitrate plus nitrite. Furthermore, for BOD, TSS, pH, and total coliform organisms, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in Attachment F, Section IV.C.3, above.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

Order No. R5-2002-0210 contained effluent limitations for turbidity. The limitations were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for total suspended solids and total coliform organisms. The effluent limitations were not intended to regulate turbidity in the

receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

This Order contains performance-based operational turbidity specifications to be met prior to disinfection in lieu of effluent limitations. This Order does not include effluent limitations for turbidity. However, the performance-based specification in this Order is an equivalent limitation that is not less stringent, and therefore does not constitute backsliding.

The proposed revised operational specifications for turbidity are the same as the effluent limitations in Order No. R5-2002-0210. (See Special Provisions VI.C.4.c. UV System Operating Specifications for turbidity specifications.) This Order moves the point of compliance from the final effluent after disinfection to an internal compliance point prior to disinfection. These revisions are consistent with state regulations implementing recycled water requirements.

The revision in the turbidity limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order No. R5-2002-0210 and therefore does not allow degradation.

Some effluent limitations in this Order are less stringent than those in Order No. R5-2002-0210. As discussed below this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

Order No. R5-2002-0210 included effluent limitations for chlorodibromomethane, dichlorobromomethane, and total trihalomethanes. At the time of issuance, the Discharger was unable to comply with these limitations. These constituents were identified as chlorination by-products. The Discharger replaced chlorination with UV disinfection on 2 August 2006, thus eliminating the primary source of the trihalomethanes. On 20 October 2006, the Discharger submitted a letter to the Regional Water Board stating that chlorine is not used anywhere in the treatment process at the Facility. Therefore, the Regional Water Board adopted Amendment No. 2 to Order No. R5-2002-0210, which discontinued the effluent limitations for chlorine residual and contained a prohibition of the use of chlorine and/or chlorine containing substances within the treatment process and discharge of chlorine and/or chlorine containing substances into the receiving water. Because the Discharger has modified the treatment system, monitoring data no longer indicates reasonable potential to exceed water quality objectives, and because Amendment No. 2 to Order No. R5-2002-0210 established a prohibition of the use of chlorine and/or chlorine containing substances into the receiving water, this Order does not retain the effluent limitations for chlorodibromomethane, dichlorobromomethane, and total trihalomethanes. Therefore, this new information indicates that removal of the effluent limitation will not result in an exceedance of a water quality standard.

Order No. R5-2002-0210 established effluent limitations for settleable solids and nitrite. As discussed in section IV.C.3.p of this Fact Sheet, monitoring data over

the term of Order No. R5-2002-0210 indicated that concentrations of settleable solids in the effluent from Discharge Point No. 001 no longer exhibit reasonable potential to cause or contribute to an exceedance of a water quality objective and effluent limitations and effluent limitations and monitoring requirements for settleable solids are not necessary to evaluate the performance of the Facility. Monitoring data also indicated that concentrations of nitrite were below the applicable effluent limitations and water quality objectives. Additionally, the detection limits for settleable solids and nitrite were all below the applicable water quality objectives. Therefore, the discharge no longer exhibits reasonable potential to exceed water quality objectives for settleable solids or nitrite and the effluent limitations are not retained in this Order. The monitoring data submitted by the Facility is considered new information by the Regional Water Board.

The removal of limitations for chlorodibromomethane, dichlorobromomethane, total trihalomethanes, settleable solids, and nitrite is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Any impact on existing water quality will be insignificant. This Order retains the prohibition of the use and discharge of chlorine and/or chlorine containing substances. Because nitrate and nitrite are generated as part of the wastewater treatment plant operations, weekly effluent monitoring is required to monitor the effectiveness of the tertiary treatment system to control these constituents.

4. Satisfaction of Antidegradation Policy

Upon adoption of Order No. R5-2002-0210, the Facility's flow was rated at 2.5 MGD (average dry weather flow). The Discharger was commencing a project to increase the capacity to provide tertiary treatment for an average dry weather flow to 3.6 MGD as well as peak wet weather discharges. Order No. R5-2002-0210 specified that once the expansion of tertiary treatment capacity was complete and certified by a Registered Engineer, the capacity would be rated at 3.6 MGD and mass-based limitations would be calculated based on this flow as well. The Discharger provided certification on 4 April 2004. The Regional Water Board found in Order No. R5-2002-0210 that *"The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant."* Therefore, an increase in the permitted average dry weather discharge flow was authorized under Order No. R5-2002-0210.

The permitted average dry weather flow of 3.6 MGD is retained from Order No. R5-2002-0210 and thus an increase in discharge flow is not authorized by this Order. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

Summary of Final Effluent Limitations Discharge Point No. 001

Table F-9. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Average Dry Weather Flow	MGD	3.6	--	--	--	--
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10 ¹	15 ¹	30 ¹	--	--
		30 ²	45 ²	60 ²	--	--
	lbs/day ³	300 ¹	450 ¹	901 ¹	--	--
		901 ²	1,351 ²	1,801 ²	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10 ¹	15 ¹	30 ¹	--	--
		30 ²	45 ²	60 ²	--	--
	lbs/day ³	300 ¹	450 ¹	901 ¹	--	--
		901 ²	1,351 ²	1,801 ²	--	--
	% Removal	85	--	--	--	--
Priority Pollutants						
Mercury, Total Recoverable	lbs/month	0.0024 ⁴	--	--	--	--
Zinc, Total Recoverable	ug/L	28.6	--	57.5	--	--
Non-Conventional Pollutants						
Acute Toxicity	% Survival	--	--	⁵	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.1	--	2.1	--	--
	lbs/day ³	33	--	63	--	--
Chronic Toxicity	--	--	--	⁶	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--
Total Coliform Organisms	MPN/100 mL	--	2.2 ^{1,7}	23 ^{1,8}	--	240 ¹
		--	23 ^{2,7}	230 ²	--	--

¹ Applies when flow in Deer Creek provides less than a daily average stream flow-to-effluent dilution of 20:1.

² Applies when flow in Deer Creek provides a daily average stream flow-to-effluent dilution of 20:1.

³ Based on an average dry weather flow of 3.6 MGD.

⁴ Applied as a total monthly mass loading limitation.

⁵ Survival of aquatic organisms in 96-hour acute bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay-----70%

Median for any three or more consecutive bioassays-----90%

⁶ There shall be no chronic toxicity in the effluent discharge.

⁷ Applied as a 7-day median effluent limitation.

⁸ Effluent total coliform organisms are not to exceed 23 MPN/100 mL more than once in any 30-day period.

E. Interim Effluent Limitations

- 1. Electrical Conductivity.** This Order includes an interim effluent limitation for electrical conductivity of 570 $\mu\text{mhos/cm}$ as an annual average, which represents the maximum annual average electrical conductivity concentration of the water supply plus an increment of 500 $\mu\text{mhos/cm}$.

F. Land Discharge Specifications

[Not Applicable]

G. Reclamation Specifications

On 22 June 1995, the State Water Board adopted Water Rights Order No. WR95-9, which established that the Discharger is required to maintain specified quantities of discharge to Deer Creek. Water Rights Order No. WR95-9 is a condition of operation of the Facility. Therefore, this Order requires the Discharger to report influent, effluent, and reclamation flows in order to validate compliance with the water rights order.

Treated wastewater discharged for reclamation is regulated under separate waste discharge requirements and must meet the requirements of California Code of Regulations, Title 22.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.
2. **Dissolved Oxygen.** The Cosumnes River has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. The California Department of Fish and Game (DFG) has verified that the fish species present in Deer Creek and downstream waters are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration necessitating a cold water designation and that trout, a cold water species, have been found both upstream and downstream of the Facility. Since the beneficial use of COLD does apply to Deer Creek as a tributary of the Cosumnes River, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in this Order. For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that "...the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation." This objective was included as a receiving water limitation in this Order.
3. **pH.** The Regional Water Board adopted the Site-Specific Water Quality Objectives for pH and Turbidity for Deer Creek in El Dorado and Sacramento Counties, Resolution No. R5-2002-0127, on 19 July 2002. The Basin Plan amendment was approved by the State Water Board, the Office of Administrative Law, and USEPA and became effective on 21 October 2003. The Basin Plan was amended to include a site specific pH objective for Deer Creek, which states "*For Deer Creek, source to Cosumnes River, pH shall not be depressed below 6.5 nor raised above 8.5.*"

The Regional Water Board adopted Resolution No. R5-2005-0028 (Amendment No. 1) on 17 March 2005, which amended Order No. R5-2002-0210 to include receiving water limitations based on objectives set forth by the Basin Plan

amendment. The site-specific objectives contained in the Basin Plan are included in this Order as receiving water limitations, consistent with Amendment No. 1.

4. **Temperature.** The Regional Water Board adopted the Site-Specific Temperature Objective for Deer Creek in El Dorado and Sacramento Counties, Resolution No. R5-2005-0119, on 16 September 2005. The Basin Plan amendment was approved by the State Water Board, the Office of Administrative Law, and USEPA and became effective on 17 May 2006. The Basin Plan was amended to include a site specific temperature objective for Deer Creek, which states, *"For Deer Creek, source to Cosumnes River, temperature changes due to controllable factors shall not cause creek temperatures to exceed the objectives specified in Table III-4A."* The objectives contained in Table III-4A are included in the following table.

Table F-10. Deer Creek Temperature Objectives

Date	Daily Maximum (°F) ¹	Monthly Average (°F) ²
January and February	63	58
March	65	60
April	71	64
May	77	68
June	81	74
July through September	81	77
October	77	72
November	73	65
December	65	58
¹ Maximum not to be exceeded.		
² Defined as a calendar month average.		

The Regional Water Board adopted Amendment No. 2 on 25 January 2007, which amended Order No. R5-2002-0210 to include receiving water limitations based on the objectives set forth by the Basin Plan amendment. The objectives contained in Table III-4A of the Basin Plan are included in this Order as receiving water limitations, consistent with Amendment No. 2.

5. **Turbidity.** The Regional Water Board adopted the Site-Specific Water Quality Objectives for pH and Turbidity for Deer Creek in El Dorado and Sacramento Counties, Resolution No. R5-2002-0127, on 19 July 2002. The Basin Plan amendment was approved by the State Water Board, the Office of Administrative Law, and USEPA and became effective on 21 October 2003. The Basin Plan was amended to include a site specific turbidity objective for Deer Creek which states,
 - *"When the dilution ratio for discharges is less than 20:1 and where natural turbidity is less than 1 Nephelometric Turbidity Unit (NTU), discharges shall not cause the receiving water daily average turbidity to exceed 2 NTUs or daily maximum turbidity to exceed 5 NTUs. Where natural turbidity is between 1 and 5 NTUs, dischargers shall not cause receiving water daily average turbidity to increase more than 1 NTU or daily maximum turbidity to exceed 5 NTUs"*

- *Where discharge dilution ratio is greater than 20:1 or greater, or where natural turbidity is greater than 5 NTUs, the general turbidity objectives shall apply."*

The Regional Water Board adopted Resolution No. R5-2005-0028 (Amendment No. 1) on 17 March 2005, which amended Order No. R5-2002-0210 to include receiving water limitations based on objectives set forth by the Basin Plan amendment. The site-specific objectives contained in the Basin Plan are included in this Order as receiving water limitations, consistent with Amendment No. 1.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.
2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.
3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). Monitoring requirements for flow, BOD₅, and TSS are retained from Order No. R5-2002-0210.
2. For salinity, the Regional Water Board is limiting effluent salinity of municipal wastewater treatment plants to an increment of 500 umhos/cm over the electrical conductivity of the municipal water supply as representing BPTC. This Order requires quarterly monitoring of EC and TDS of the Discharger's influent and water supply to continue to characterize contributions of salinity to the Facility.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream.
2. Effluent monitoring requirements for flow, pH, temperature, BOD₅, TSS, total coliform organisms, ammonia, electrical conductivity, and hardness have been retained from Order No. R5-2002-0210 to characterize the effluent and determine compliance with applicable effluent limitations.
3. Nitrate and nitrite are generated as part of the wastewater treatment plant operations. Additionally, effluent limitations for nitrate plus nitrite have been retained from Order No. R5-2002-021-. Therefore, weekly effluent monitoring is required to monitor the effectiveness of the tertiary treatment system to control these constituents.
4. As discussed in section IV.C.3 of this Fact Sheet, it is unlikely that application of the chronic criterion for aluminum of 87 ug/L is necessary to protect aquatic life in Deer Creek. In the absence of an applicable chronic criterion, this Order requires monitoring for aluminum along with priority pollutants and other constituents of concern quarterly during the third year of the permit term to assess the potential to exceed other applicable water quality objectives.
5. As discussed in section IV.C.3 of this Fact Sheet, although there were detections of bis (2-ethylhexyl) phthalate, due to concerns with contamination from plastics in monitoring equipment, it is uncertain whether bis (2-ethylhexyl) phthalate is truly present in the effluent discharge. To collect the data necessary to determine the prevalence in the effluent, this Order requires monthly monitoring for bis (2-ethylhexyl) phthalate.

6. Order No. R5-2002-0210 contained effluent limitations and monitoring requirements for chlorodibromomethane, dichlorobromomethane, and total trihalomethanes. Order No. R5-2002-0210 also contained monitoring requirements for chloroform. The Discharger has replaced the chlorine disinfection process with UV disinfection and monitoring data no longer indicates reasonable potential to exceed water quality objectives. Furthermore, Amendment No. 2 to Order No. R5-2002-0210 established a prohibition of the use of chlorine and/or chlorine containing substances into the receiving water. Therefore this Order does not retain the monitoring requirements for chlorodibromomethane, dichlorobromomethane, total trihalomethanes, or chloroform.
7. Monitoring data collected over the term of Order No. R5-2002-0210 for copper and settleable solids did not demonstrate reasonable potential to exceed water quality objectives. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2002-0210.
8. Monitoring data collected over the term of Order No. R5-2002-0210 for zinc indicates reasonable potential to exceed water quality criteria. Therefore, monthly effluent monitoring for zinc has been established in this Order.
9. The Sacramento – San Joaquin Delta downstream of the discharge is on the 303(d) list for mercury. The Regional Water Board is proposing to adopt a TMDL for total mercury and/or methylmercury. Therefore, this Order establishes monthly monitoring for total mercury and methylmercury in order to collect data on the presence of mercury in the effluent.
10. This Order includes operational specifications for turbidity that are the same as the effluent limitations in Order No. R5-2002-0210. (See Special Provisions VI.C.4.c. UV System Operating Specifications for turbidity specifications.) This Order moves the point of compliance from the final effluent after disinfection to an internal compliance point prior to disinfection. Therefore, monitoring for turbidity is required at Monitoring Location UVS-001 and effluent monitoring requirements have not been retained in this Order.
11. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2002-0210, and was used to conduct a meaningful reasonable potential analysis. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Periodic priority pollutant monitoring is also necessary to provide data that would account for changes in the service population. The monitoring frequency for priority pollutants has been reduced from semi-annually to quarterly during the third year of the permit term because the data provided during the term of Order No. R5-2002-0210 indicated no reasonable potential for those pollutants for which no WQBELs were established. See Attachment I for more detailed requirements related to performing the priority pollutant study.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing, consistent with Order No. R5-2002-0210, is required to demonstrate compliance with the effluent limitations for acute toxicity.
2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing, consistent with Order No. R5-2002-0210, is required to demonstrate compliance with the Basin Plan's narrative toxicity objective and the narrative effluent limitation contained in this Order.

D. Reclamation Monitoring

1. As discussed in section IV.G of this Fact Sheet, this Order requires the Discharger to report influent, effluent, and reclamation flows in order to validate compliance with Water Rights Order No. WR95-9. Therefore, this Order requires continuous flow monitoring of recycled water, consistent with the requirements of Order No. R5-2002-0210.

E. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.
- b. Receiving water monitoring requirements for flow, dissolved oxygen, electrical conductivity, hardness, pH, temperature, turbidity, and radionuclides have been retained from Order No. R5-2002-0210.
- c. Quarterly monitoring during the third year of the permit term for priority pollutants and other constituents of concern is required to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The hardness (as CaCO_3) of the upstream receiving water shall also be monitoring concurrently with the priority pollutants as well as pH to ensure the water quality criteria/objectives are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP. See Attachment I for more detailed requirements related to performing the priority pollutant study.

F. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.6.a.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

2. Water Supply Monitoring

The Antidegradation Policy (Resolution No. 68-16) requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge. For salinity, the Regional Water Board is limiting effluent salinity of municipal wastewater treatment plants to an increment of 500 umhos/cm over the electrical conductivity of the municipal water supply as representing BPTC. This Order requires the Discharger to monitor quarterly for effluent conductivity and total dissolved solids in the municipal water supply to continue to characterize contributions of salinity to the Facility.

3. UV Disinfection System Monitoring

UV System specifications and monitoring and reporting are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV disinfection system monitoring requirements are imposed pursuant to requirements established by the California DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's *"Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse"*.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority

specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

- a. **Mercury.** This provision allows the Regional Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Regional Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.
- b. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents, with the exception of copper. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for inorganic constituents (i.e., zinc). If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Salinity.** This Order requires weekly effluent monitoring of for electrical conductivity. The Regional Water Board may reopen this Order to include a final effluent limitations upon the availability of new information or if the Regional Water Board completes development of a new salinity policy for the Central Valley.

2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00.) Based on quarterly whole effluent chronic toxicity testing performed by the Discharger from January 2005 through December 2007, the discharge has

reasonable potential to cause or contribute to an to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a Toxicity Reduction Evaluation (TRE) Work Plan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity has been demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEC}$) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

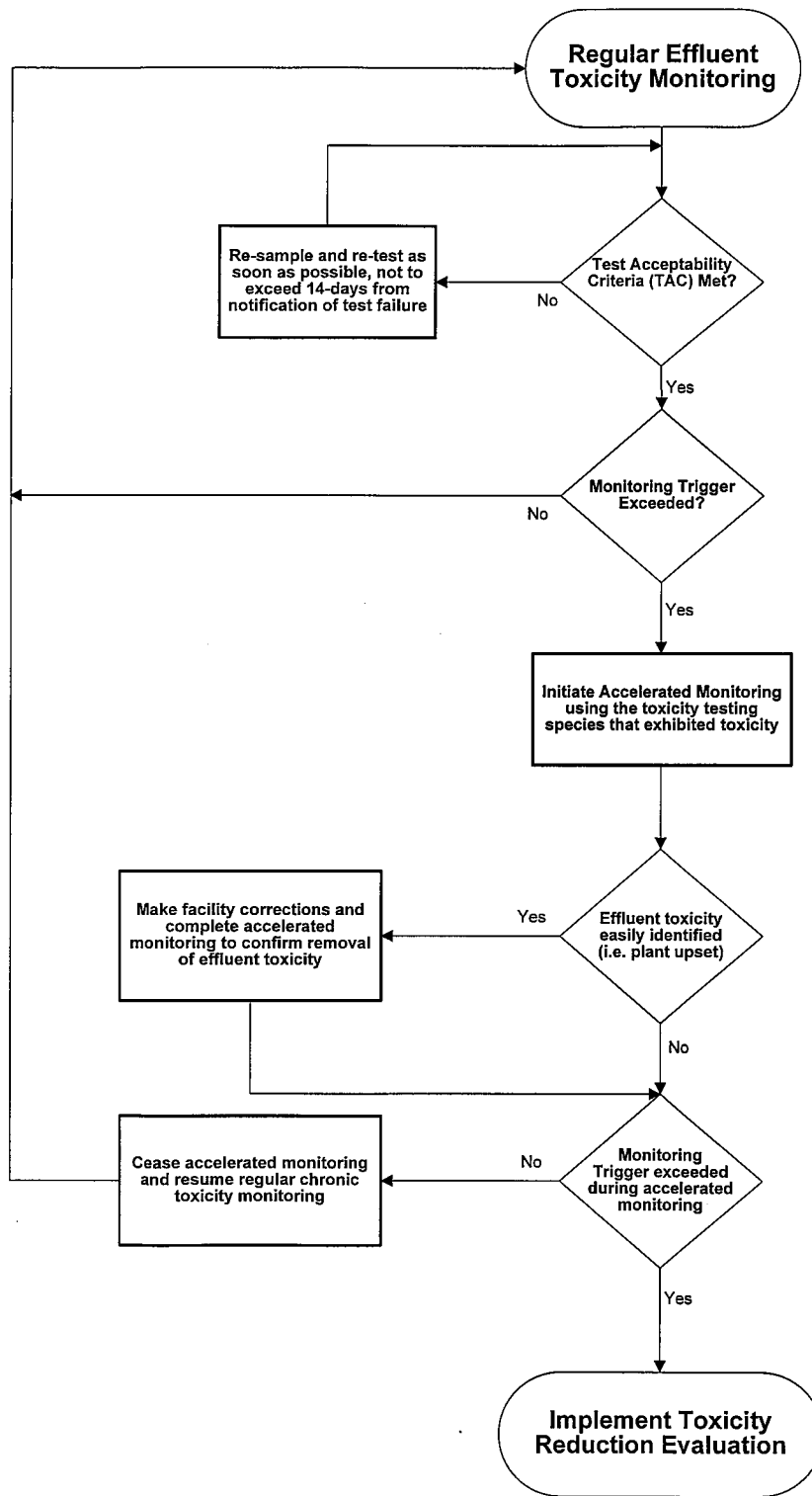
The provision requires accelerated monitoring consisting of four chronic toxicity tests every 2 weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833B-99/002, August 1999.
- *Generalized Methodology for Conducting Industrial TREs*, EPA/600/2-88/070, April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

Figure F-1
WET Accelerated Monitoring Flow Chart



- b. **UV Disinfection Study.** During power failures, the UV disinfection system experiences a lag time prior to the start-up of the backup generators. The Discharger currently uses additional lamps to provide a margin of safety during the lag time. However, the use of additional lamps results in increased energy usage and more frequent lamp replacement. Therefore, this Order requires the Discharger to evaluate various methods/alternatives for assuring UV disinfection capability in the event of a power failure. The technical evaluation shall identify alternatives, effectiveness, and describe any modifications/equipment necessary, as well as a time schedule to implement process or operational changes.
- c. **Temperature Site-Specific Objective Study.** Regional Water Board Resolution No. R5-2003-0006, which amended the Basin Plan to include site-specific temperature objectives for Deer Creek, directed the Executive Officer to require temperature, flow, and biological monitoring consistent with section 8.1.1 of the January 2003 Staff Report for the Basin Plan amendment. Subsequent to the Basin Plan amendment, the Regional Water Board amended the Monitoring and Reporting Program for Order No. R5-2002-0210 to require the Discharger to submit a technical report including a monitoring plan and schedule that demonstrates compliance with section 8.1.1 of the Staff Report. Section 8.1.1 of the Staff Report requires that annual reports be submitted to the Regional Water Board for each of 3 years following adoption of the temperature objectives. The Discharger submitted the first annual report on 1 May 2008. This Order requires the Discharger to submit the remaining annual reports as specified in section 8.1.1 of the Staff Report.

3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Report.** An Evaluation and Minimization Report for salinity is required in this Order to ensure adequate measures have been developed and implemented by the Discharger to reduce the discharge of salinity to Deer Creek.

4. Construction, Operation, and Maintenance Requirements

- a. **UV Disinfection System Operating Specifications.** UV System specifications and monitoring and reporting is required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g. viruses in the wastewater). UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV system. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by the California DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse" first published in December 2000 revised as a Second Edition dated May 2003. In addition, a memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that

provisions be included in permits for water recycling treatment plants employing UV disinfection requiring Dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines).

Turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms when flow in Deer Creek provides less than a daily average stream flow-to-effluent dilution of 20:1. The tertiary treatment process is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity and could impact UV dosage. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.

Minimum UV dosage and turbidity specifications are included as operating criteria in section VI.C.4 of this Order and section IX.C of the Monitoring and Reporting Program (Attachment E) to ensure that adequate disinfection of wastewater is achieved.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

- i. USEPA conducted a pretreatment performance evaluation inspection on 12/13 April 2003, and issued an inspection report to the Discharger on 10 June 2003 summarizing the findings of the inspection. As a result of the inspection, USEPA issued Administrative Order CWA-307-9-03-025 requiring the Discharger to begin monthly self-monitoring of the influent, effluent, and receiving water at the Facility and the El Dorado Hills WWTP by 1 January 2004; submit a written description of the pretreatment program for approval by 28 September 2004; adopt local limits and ordinance within 60 days of obtaining approval; and issue all pending permits within 180 days of obtaining approval. The Discharger submitted their Industrial Pretreatment Program package to USEPA on 28 September 2004. The submittal was reviewed by USEPA and comments on the submittal were provided to the Discharger. However, the Discharger still does not have an approved pretreatment program. Therefore, this Order requires, within 1 year from adoption of the Order, the submission of a written pretreatment program. The organization and contents of the written description of the pretreatment program are based on guidance provided by USEPA Region 9

for program submissions and include the requirements contained in Attachment H of this Order.

- ii. The Federal Clean Water Act, Section 307(b), and Federal Regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR Part 403.
 - iii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board or the USEPA may take enforcement actions against the Discharger as authorized by the CWA.
- b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the Facility were required to obtain enrollment for regulation under the General Order by 1 December 2006.

6. Other Special Provisions

- a. **Ownership Change.** To maintain the accountability of the operation of the Facility, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger.

7. Compliance Schedules

[Not Applicable]

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Deer Creek Wastewater Treatment Plant. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through publishing in a local newspaper by 3 October 2008 and by posting at the nearest city hall or courthouse, the nearest post office (if allowed), and at the entrance to the Facility.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on 3 November 2008.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 4/5 December 2008

Time: 8:30 am

Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral

testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/rwqcb5/> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Ken Landau at (916) 464-4726.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	ug/L	150	--	200	750 ¹	--	--	--	--	200	No
Ammonia Nitrogen, Total (as N)	mg/L	<0.1	--	1.65	2.14 ¹	1.65 ²	--	--	--	--	Yes ³
Arsenic, Total Recoverable	ug/L	0.39	--	10	340	150	--	--	--	10	No
Bis (2-Ethylhexyl) Phthalate	ug/L	2.1	--	1.8	--	--	1.8	5.9	--	4	No ⁴
Chlorodibromomethane	ug/L	0.286	--	0.41	--	--	0.41	34	--	80	No
Chloroform	ug/L	0.78	--	80	--	--	--	--	--	80	No
Chromium, Total Recoverable	ug/L	0.72	--	50	--	--	--	--	--	50	No
Copper, Total Recoverable	ug/L	15	--	43	60	43	1,300	--	--	1,000	No
Dichlorobromomethane	ug/L	0.336	--	0.56	--	--	0.56	46	--	80	No
Electrical Conductivity @ 25°C	umhos/cm	560	710	700 ⁵	--	--	--	--	--	900	No
Lead, Total Recoverable	ug/L	0.27	--	8.62	85	8.62	--	--	--	15	No
Mercury, Total Recoverable	ug/L	0.00258	--	0.050	--	--	0.050	0.051	--	2.0	No
Methyl Bromide	ug/L	15	--	48	--	--	48	4,000	--	--	No
Nickel, Total Recoverable	ug/L	4.6	--	25.04	225	25.04	610	4,600	--	100	No
Nitrite Nitrogen, Total (as N)	ug/L	300	--	1,000	--	--	--	--	--	1,000	No
Nitrate Plus Nitrite (as N)	mg/L	14.1	--	10	--	--	--	--	--	10	Yes
Thallium, Total Recoverable	ug/L	0.27	--	1.7	--	--	1.7	6.3	--	2	No
Total Trihalomethanes	ug/L	1.7	--	80	--	--	--	--	--	80	No
Zinc, Total Recoverable	ug/L	85	--	57.5	57.5	57.5	--	--	--	5,000	Yes

Footnotes:

- MEC = Maximum Effluent Concentration
- B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
- C = Criterion used for Reasonable Potential Analysis
- CMC = Criterion Maximum Concentration (CTR or NTR)
- CCC = Criterion Continuous Concentration (CTR or NTR)
- Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
- Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
- Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
- MCL = Drinking Water Standards Maximum Contaminant Level
- USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average
- USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average
- Reasonable potential is established because municipal wastewater contains ammonia and inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. See section IV.C.3.f of the Fact Sheet (Attachment F).
- Due to potential contamination of effluent samples, reasonable potential for bis (2-ethylhexyl) phthalate cannot be determined.
- Water Quality for Agriculture

ATTACHMENT H – PRETREATMENT PROGRAM REQUIREMENTS

The Discharger shall prepare a pretreatment program submission in accordance with the following organization.

A. Chapter 1 – Organization and Multi-jurisdiction Implementation

This chapter should describe the overall program structure as well as contain descriptions of the treatment plants, collection systems, reclaim systems and the service area including political boundaries.

B. Chapter 2 – Legal Authority

This chapter should contain the revised and adopted sewer use ordinance and all necessary multi-jurisdictional agreements.

C. Chapter 3 – Local Limits

This chapter should contain the technical basis for the local limits. This would include the analyses performed to determine the maximum headworks loadings for both wastewater treatment plants and the maximum pollutant levels protective of the collection system, as well as the method of allocating allowable loadings to the users, a schedule of public hearings and outreach, and the ordinance adoption procedures. The local limits can be numerical concentrations, loading limits, prohibitions, or control strategies.

D. Chapter 4 – Identification of Non-domestic Users

This chapter should contain the procedures used in the initial industrial user survey as well as the procedures to be used for on-going updates. This chapter should also include the current inventory of industrial users, by non-domestic sewer connection, and of the zero-discharging categorical industrial users who comply with their federal standards by not discharging process wastewaters.

The inventory must indicate the following for each industrial user and zero-discharging categorical industrial user:

1. Whether it qualifies as a significant industrial user;
2. The average and peak flow rates;
3. The SIC code;
4. The pretreatment-in-place; and
5. The local permit status.

E. Chapter 5 – Permits and Fact Sheets

This chapter should describe the permitting procedures and include a fact sheet and final draft permit for each significant industrial user to be issued upon approval of the local limits and revised ordinance by the Regional Water Board. The fact sheets must indicate the following for each significant industrial user and zero-discharging categorical industrial user:

1. The industry name, address, owner or plant manager;
2. The permit expiration date (not to exceed 5 years in duration);
3. A description of the facility including the products made or services provided, building names, the process in each building, and when current operations began;
4. The identification of each sewer connection;
5. A description of the contributing waste streams that comprise each identified non-domestic discharge into the sewers;
6. The pretreatment-in-place for each identified non-domestic discharge to the sewers;
7. The classification by federal point source category and the reasons justifying this classification;
8. The applicable federal categorical pretreatment standards (adjusted if necessary to account for dilution), supporting production data (if necessary), and the compliance sampling point(s) where the standards apply;
9. The pollutants of concern and the compliance sampling point(s) where the local limits apply;
10. A site map indicating the locations of all compliance sampling point(s), sewer connections, and sewer laterals;
11. The sampling frequency by regulated pollutant for each compliance sampling point, and the supporting statistical rationale, to ensure that the sampling is representative of the wastewater discharge variability over the reporting period; and
12. The sampling protocol by regulated pollutant for each compliance sampling point to ensure that the samples collected to determine compliance with federal standards are representative of the sampling day's discharge.

F. Chapter 6 – Compliance Monitoring

This chapter should describe the industrial user self-monitoring program and Discharger's oversight monitoring program. The compliance monitoring program must ensure that all sampling is representative over the reporting period and that each sample collected to determine compliance with federal standards is representative of the sampling day's

discharge. The compliance monitoring program must also set analytical detection limits that are sufficiently below federal standards and local limits to allow the determination of non-compliance.

G. Chapter 7 – Enforcement

This chapter should establish the enforcement response plan to be used to address, at a minimum, each of the following types of violations:

1. Isolated and chronic violations of permit effluent limits;
2. Violations of permit effluent limits that result in any adverse impacts upon the treatment works such as pass-through, interference, sludge contamination, sewer line degradation, explosive or inflammability risks, or worker health and safety risks;
3. Failure to self-monitor or report;
4. The bypassing of pretreatment necessary to comply with permit effluent limits;
5. Dilution as a substitute for treatment necessary to comply with Federal categorical pretreatment standards;
6. The bypassing of compliance sampling or the tampering with sampling equipment; and
7. Willful or negligent violations.

H. Chapter 8 – Resources

This chapter would cover the budget, staffing and equipment needs of the pretreatment program.

I. Chapter 9 – Public Participation and Confidentiality

This chapter would describe the administrative procedures required under 40 CFR 403.8(f)(1)(vii) and 403.8(f)(2)(vii).

ATTACHMENT I – CONSTITUENTS OF CONCERN

CTR CONSTITUENTS

Priority Pollutants

1	Antimony	41	1,1,1-Trichloroethane	81	Di-n-butyl Phthalate
2	Arsenic	42	1,1,2-Trichloroethane	82	2,4-Dinitrotoluene
3	Beryllium	43	Trichloroethylene	83	2,6-Dinitrotoluene
4	Cadmium	44	Vinyl Chloride	84	Di-n-Octyl Phthalate
5a	Chromium III	45	2-Chlorophenol	85	1,2-Diphenylhydrazine
5b	Chromium VI	46	2,4-Dichlorophenol	85	Fluoranthene
6	Copper	47	2,4-Dimethylphenol	87	Fluorene
7	Lead	48	2-Methyl-4,6-Dinitrophenol	88	Hexachlorobenzene *
8	Mercury	49	2,4-Dinitrophenol	89	Hexachlorobutadiene
9	Nickel	50	2-Nitrophenol	90	Hexachlorocyclopentadiene
10	Selenium	51	4-Nitrophenol	91	Hexachloroethane
11	Silver	52	4-Chloro-3-Methylphenol	92	Indeno(1,2,3-c,d)Pyrene
12	Thallium	53	Pentachlorophenol *	93	Isophorone
13	Zinc	54	Phenol	94	Naphthalene
14	Cyanide	55	2,4,6-Trichlorophenol	95	Nitrobenzene
15	Asbestos	56	Acenaphthene	96	N-Nitrosodimethylamine
16	2,3,7,8-TCDD (Dioxin)	57	Acenaphthylene	97	N-Nitrosodi-n-Propylamine
17	Acrolein	58	Anthracene	98	N-Nitrosodiphenylamine
18	Acrylonitrile	59	Benzidine	99	Phenanthrene
19	Benzene	60	Benzo(a)anthracene	100	Pyrene
20	Bromoform	61	Benzo(a)pyrene	101	1,2,4-Trichlorobenzene
21	Carbon Tetrachloride	62	Benzo(b)fluoranthene	102	Aldrin *
22	Chlorobenzene	63	Benzo(g,h,i)perylene	103	Alpha BHC *
23	Chlorodibromomethane	64	Benzo(k)fluoranthene	104	Beta BHC *
24	Chloroethane	65	Bis(2-chloroethoxy) Ether	105	Gamma BHC (Lindane)*
25	2-Chloroethylvinyl ether	66	Bis(2-chloroethyl) Ether	106	Delta BHC *
26	Chloroform	67	Bis(2-chloroisopropyl) Ether	107	Chlordane *
27	Dichlorobromomethane	68	Bis(2-ethylhexyl) Phthalate	108	4,4'-DDT *
28	1,1-Dichloroethane	69	4-Bromophenyl Phenyl Ether	109	4,4'-DDE *
29	1,2-Dichloroethane	70	Butylbenzyl Phthalate	110	4,4'-DDD *
30	1,1-Dichloroethylene	71	2-Chloronaphthalene	111	Dieldrin *
31	1,2-Dichloropropane	72	4-Chlorophenyl Phenyl Ether	112	Alpha Endosulfan *
32	1,3-Dichloropropylene	73	Chrysene	113	Beta Endosulfan *
33	Ethylbenzene	74	Dibenzo(a,h)anthracene	114	Endosulfan Sulfate *
34	Methyl Bromide	75	1,2-Dichlorobenzene	115	Endrin *
35	Methyl Chloride	76	1,3-Dichlorobenzene	116	Endrin Aldehyde *
36	Methylene Chloride	77	1,4-Dichlorobenzene	117	Heptachlor *
37	1,1,2,2-Tetrachloroethane	78	3,3-Dichlorobenzidine	118	Heptachlor Epoxide *
38	Tetrachloroethylene	79	Diethyl Phthalate	119 to	PCBs (Aroclors)
39	Toluene	80	Dimethyl Phthalate	125	
40	1,2-trans-Dichloroethylene			126	Toxaphene *

* Persistent Chlorinated Hydrocarbon Pesticides

Attachment I (continued)

NON-CTR CONSTITUENTS OF CONCERN

Standard Minerals:

Boron	Iron	Potassium
Calcium	Magnesium	Sodium
Chloride	Manganese	Total Alkalinity (including alkalinity series)
Hardness	Phosphorus	

Analysis will include verification that the analysis is complete (i.e. cation/anion balance)

Non-CTR Persistent Chlorinated Hydrocarbon Pesticides:

Captan	Dicofol	Mirex
2,4-D	Dinoseb	PCNB (Pentachloronitrobenzene)
2,4-DB	Isodrin (an isomer of Aldrin)	Perthane
2,4-D compounds	Kepone (Chlordecone)	Strobane
Dalapon	MCPA	2,4,5-T
Dicamba	MCPP	2,4,5,TP (Silvex)
Dichloran	Methoxychlor	2,4,5-T compounds
Dichloroprop		

See Attachment A for complete list of Persistent Chlorinated Hydrocarbon Pesticides, including CTR Constituents.

Other Constituents of Concern:

Alachlor	Di(2-ethylhexyl)adipate	Radionuclides
Aluminum	Endothal	Simazine
Atrazine	Ethylene dibromide	Styrene
Barium	Flouride	Sulfate
Bentazon	Glyphosate	Sulfide
Carbofuran	MBAS	Sulfite
Chlorpyrofos	Methoxychlor	Thiobencarb
Chromium, Total	Molinate (ordram)	Tributyltin
Dalapon	MTBE	Trichlorofluoromethane
Diazinon	Oil and Grease	1,1,2-trichloro-1,2,2-trifluoromethane
Diquat	Oxamyl	Xylenes
Dinoseb	Phosphorus	
1,2-dibromo-3-chloropropane (DBCP)	Picloram	